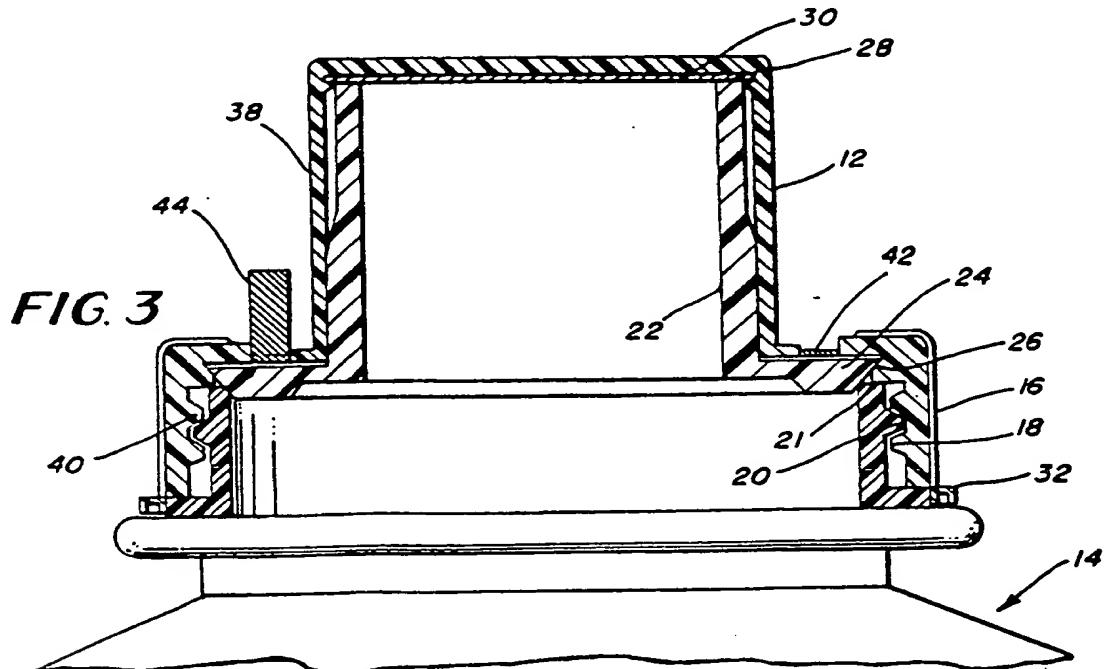


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(54) Package for dispensing liquids

(57) A disposable syrup package for use in a post-mix beverage dispenser includes a blow-molded main container body 14 and a separately formed injection-molded discharge spout 22 clamped and sealed thereto by a pilfer-proof closure assembly 12. A pull-tab strip 42 is provided in the closure assembly so that an inner portion 38 of the closure may be selectively removed to open the discharge spout 22 without unclamping the spout from the container. The closure includes a pilfer-proof band 32 having ratchet teeth which engage ratchet teeth located on the container.



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FIG. 1

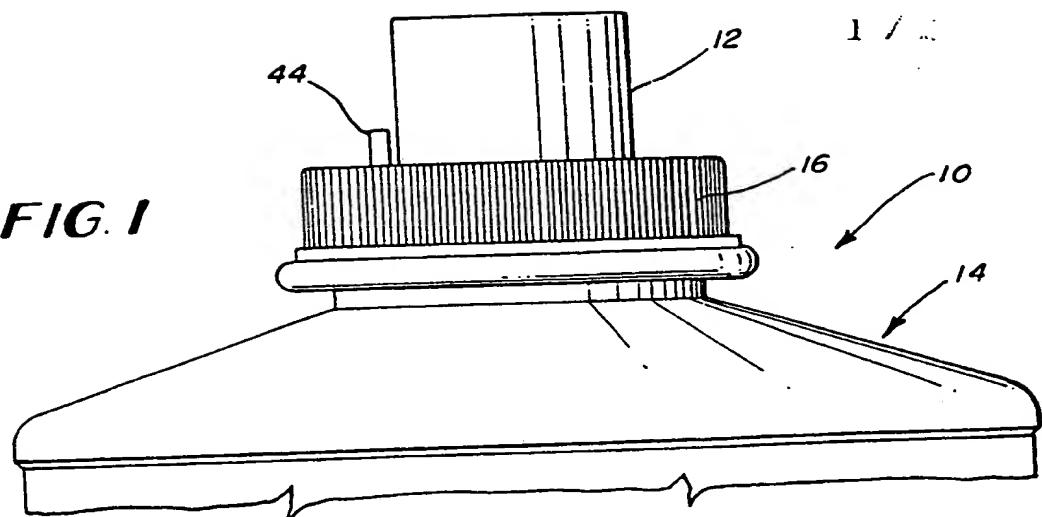


FIG. 2

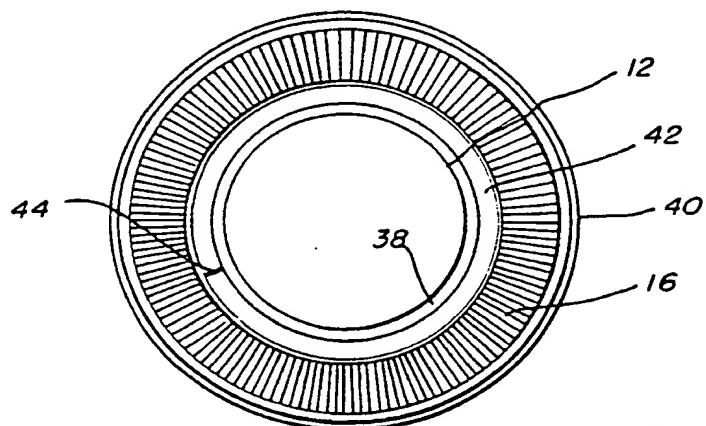
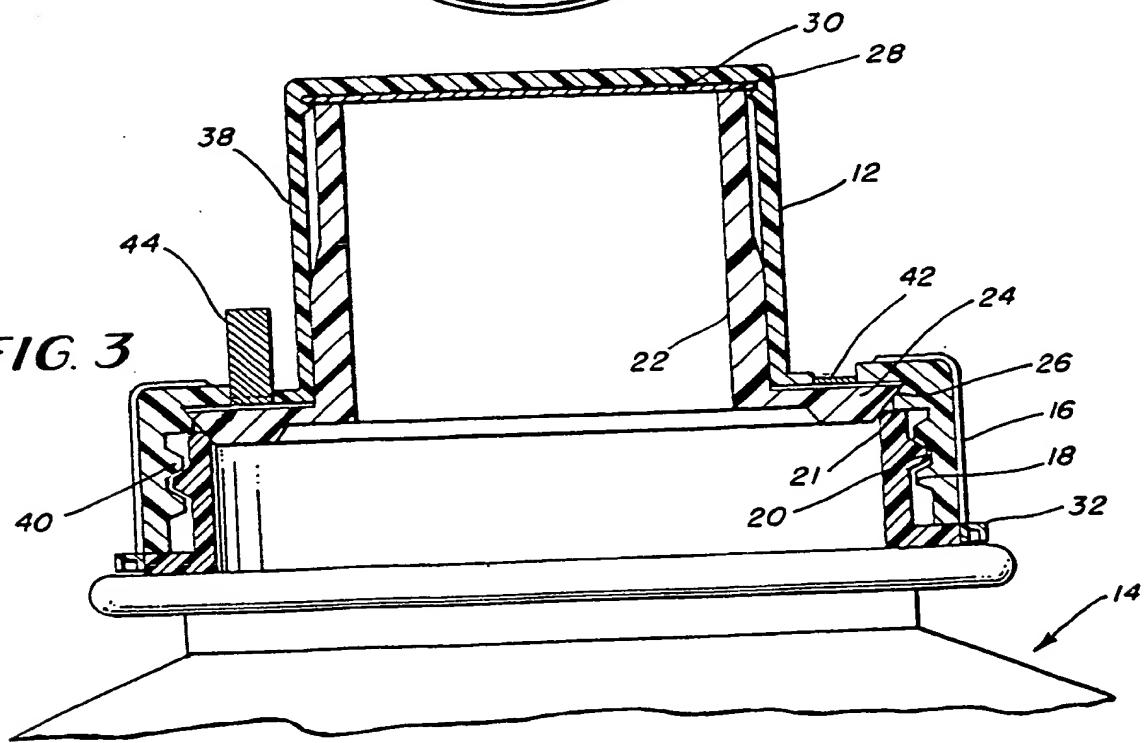


FIG. 3



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FIG. 4

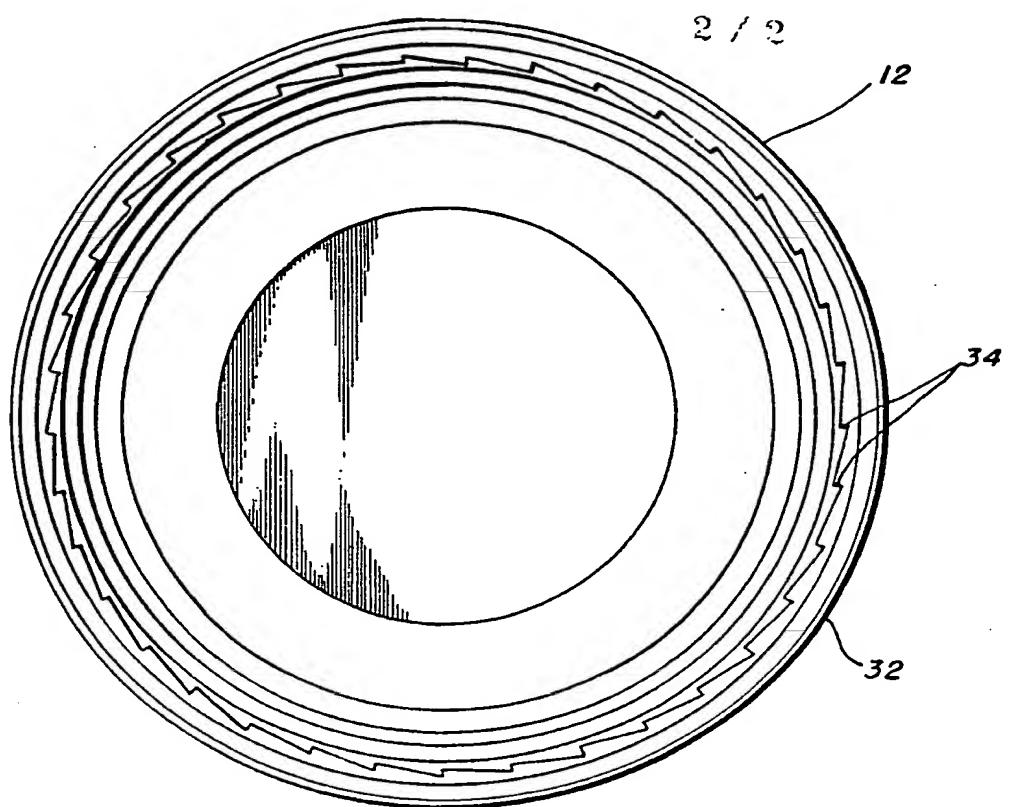
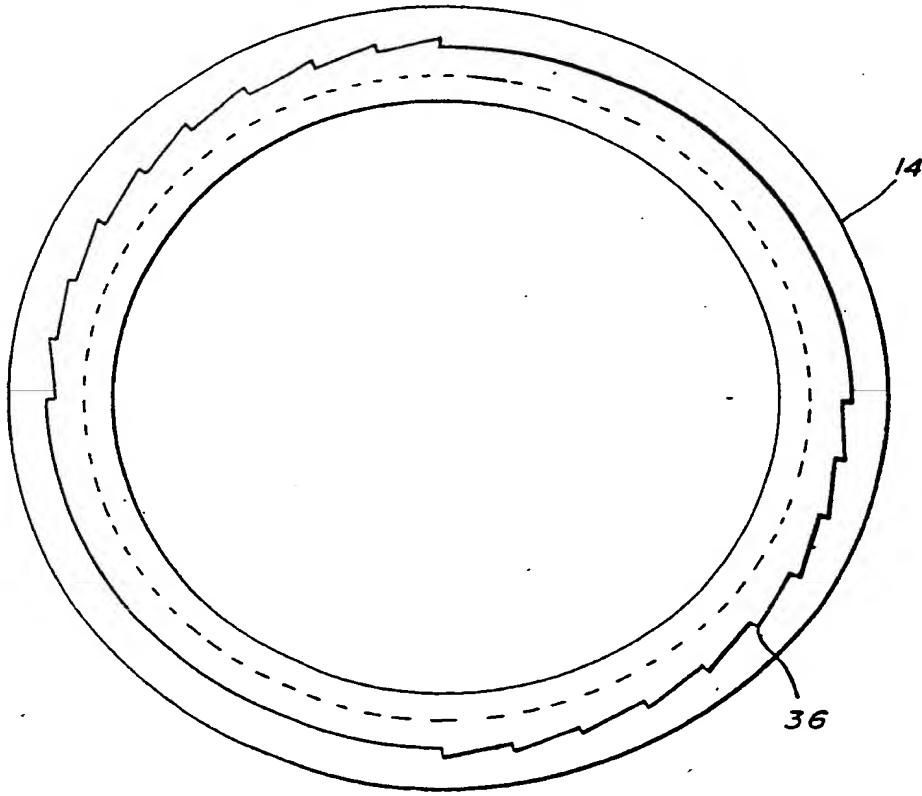


FIG. 5



SPECIFICATION

Package for dispensing liquids

5 The present invention relates to a package for containing and dispensing liquids, for example syrup, of the type generally used in a gravity-flow, post-mix beverage dispensing system.

10 Disposable syrup packages for use in gravity-flow, post-mix beverage dispensers are known. Exemplary, prior art syrup packages are illustrated in our U.S. Patents Nos. 4,216,885 and 4,522,319 and our U.S. Design Patent No. 273,768. The syrup packages

15 of the above patents are blow-molded from plastic to form a main container body and a discharge spout extending from the open end thereof. In use in a gravity-flow dispenser, the openings in the discharge spouts, which are

20 sealed with a frangible membrane, are inserted into an upwardly-facing socket of a valving assembly. Valving assemblies of this general type are disclosed in our U.S. Patents Nos 4,306,667 and 4,426,019. When disposed in

25 the sockets of these valving assemblies, it is important that the discharge spouts form a hermetic seal in the socket with associated gaskets thereof. Therefore, the blow-molded spouts must be carefully machined to accurate

30 tolerances and should have a smooth finish for engaging these gaskets.

The above-described machining step to the blow-molded spout adds considerable expense to the manufacture of the package, and is a

35 time-consuming step which must be performed separately from the blow-molding process by separate apparatus.

Viewed from one aspect, the invention provides a package for containing liquids to be dispensed therefrom, comprising a container having a discharge end defining a discharge opening through which liquids may be dispensed, a closure mounted on said container discharge end and covering said discharge

40 opening, a spout clamped between said closure and said container discharge end, an annular pull tab strip formed as part of said closure and positioned between an inner portion and an outer portion thereof, and a pull

45 tab connected to said pull tab strip so that said pull tab strip may be pulled from said closure, thereby releasing the inner portion of said closure in order to uncover said spout.

Viewed from another aspect, the invention provides an assembly for closing a container for liquids, comprising a closure adapted to cover and close a discharge opening of the container, a spout mounted by said closure and adapted to engage around said discharge

50 opening, an annular pull tab strip formed as part of said closure and positioned between an inner portion and an outer portion thereof, and a pull tab connected to said pull tab strip so that said pull tab strip may be pulled from

55 said closure, thereby releasing the inner por-

tion of said closure in order to uncover said spout.

With such arrangements, the container and the spout can be formed separately, for example by different molding processes. Thus, for example, the discharge spout may be fabricated from plastic by injection-molding techniques which result in a molded spout that does not require machining to achieve the tolerances and surface characteristics desired. However, the container body may still be formed by the less-expensive blow-molding techniques. Accordingly, a lower cost package can be obtained.

60 In a preferred embodiment, a low-cost, gravity-flow syrup package has a discharge spout with sufficiently accurate tolerances and finish characteristics, which spout does not require machining to achieve these tolerances

65 and finish characteristics. The mounting of spout by the closure will generally ensure that the spout is sealed to the container body, and this seal is maintained after the spout has been uncovered. Preferred packages will

70 generally be disposable.

A preferred embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which:

75 *Figure 1* is a side elevational view of part of a package in accordance with the invention having a closure in place on a container;

80 *Figure 2* is a top plan view of the closure;

85 *Figure 3* is a partial cross-sectional view of the closure and a spout in place on the container;

90 *Figure 4* is a bottom plan view of the closure; and

95 *Figure 5* is a top plan view of the container.

100 Referring in detail to the drawings, there is illustrated a disposable package 10 which includes a closure 12 located on a blow-molded plastic container 14 as particularly shown in Fig. 1. Ribs 16 are provided on the periphery

105 of closure 12 so that the closure may be easily rotated. Rotation of the closure 12 attaches it to the container 14 through the engagement of screw threads 18 on the closure and screw threads 20 on the container, as shown in Fig.

110 115 3. A separate injection-molded, plastic spout 22 is attached to the closure 12 by a flange 24 formed at the bottom of the spout 22 which is received in a groove 26 in the closure, also as shown in Fig. 3. A liner 28 is

115 120 positioned in the closure 12 so that it engages the end 30 of the spout 22. End 30 may have a frangible membrane (not shown) sealed thereto to provide a hermetic package.

125 The closure 12 further includes a pilfer-proof band 32 having ratchet teeth 34, as particularly shown in Fig. 4. When the pilfer-proof band is in place, the ratchet teeth 34 engage ratchet teeth 36 located on the container as particularly shown in Fig. 5.

130 An inner portion 38 of the closure 12 is

spaced from an outer annular portion 40 of the closure by annular tear or pull-tab strip 42, which has a pull tab 44 attached thereto.

After the blow-molded container 14 has

- 5 been filled, the closure 12, with the injection-molded spout 22 located therein, is mounted on the container by way of the cooperating screw threads 18 on the closure and 20 on the container. The cooperating ratchet teeth 10 34 on the closure and 36 on the container allow the closure 12 to be rotated and, thus, threaded and tightened onto the container 14, but will not allow the closure 12 to be removed by rotating it in the opposite direction.
- 15 The closure 12 is tightened sufficiently to form a hermetic seal between flange 24 of spout 22 and rim 21 defining the open end of container 14.

When the contents of the container 14 are 20 to be utilized, the pull tab 44 is pulled, thereby removing the annular pull tab strip 42 from the closure 12. The removal of the pull tab strip 42 frees the inner portion 38 of the closure 10 from the remainder of the closure 25 so that it may be removed and, thus, uncover the spout 22. The outer portion 40 of the closure 12, including the groove 26, remains in place and, thus, continues to secure and seal the spout 22 in place against the rim 21 30 of container 14.

The container and spout are fabricated from pressure-resistant synthetic resins, such as PET (polyethylene terephthalate), PVC (Polyvinyl chloride resin), PE (polyethylene), PS (polystyrene), PP (polypropylene), PVPC (polyvinylidene chloride), etc.

A preferred plastic package thus comprises a container body fabricated from plastic by blow-molding and a separate discharge spout 40 fabricated from plastic by injection molding, the spout being clamped to the container body by a closure.

The present invention and specific embodiment thereof being thus described, it will be 45 apparent to a person skilled in the art that many variations are possible. Such variations are not to be regarded as excluded from the scope of the disclosure of this specification, and therefore all such modifications as would 50 be obvious to one skilled in the art are intended to be included within the scope of the disclosure.

CLAIMS

- 55 1. A package for containing liquids to be dispensed therefrom, comprising a container having a discharge end defining a discharge opening through which liquids may be dispensed, a closure mounted on said container 60 discharge end and covering said discharge opening, a spout clamped between said closure and said container discharge end, an annular pull tab strip formed as part of said closure and positioned between an inner portion and an outer portion thereof, and a pull

tab connected to said pull tab strip so that said pull tab strip may be pulled from said closure, thereby releasing the inner portion of said closure in order to uncover said spout.

- 70 2. A package as claimed in claim 1, wherein ribs are positioned on the exterior of said closure.
- 75 3. A package as claimed in claim 1 or 2, wherein said spout has a flange received in a groove located in said closure.
4. A package as claimed in claim 1, 2 or 3, wherein said closure is mounted on said container discharge end by a threaded connection.
- 80 5. A package as claimed in any preceding claim, wherein said closure includes a pilfer-proof band having ratchet teeth, and said container has ratchet teeth located thereon which operatively engage said pilfer-proof band 85 ratchet teeth.
6. A package as claimed in any preceding claim, wherein said container is fabricated from plastic by blow-molding and said spout is fabricated from plastic by injection molding.
- 90 7. An assembly for closing a container for liquids, comprising a closure adapted to cover and close a discharge opening of the container, a spout mounted by said closure and adapted to engage around said discharge 95 opening, an annular pull tab strip formed as part of said closure and positioned between an inner portion and an outer portion thereof, and a pull tab connected to said pull tab strip so that said pull tab strip may be pulled from 100 said closure, thereby releasing the inner portion of said closure in order to uncover said spout.
8. A package for containing liquids to be dispensed therefrom, substantially as hereinbefore described with reference to the accompanying drawings.

- 105 9. An assembly for closing a container for liquids substantially as hereinbefore described with reference to the accompanying drawings.

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